Metrication and the Consumer:

Avoiding Deception in the Marketplace

American National Metric Council

The American National Metric Council is a nonprofit organization whose purpose is to provide guidance and coordination for voluntary conversion to the metric system in the United States. For more information write to ANMC, 1625 Massachusetts Avenue, N.W. Washington, D.C. 20036.

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PREFACE

The Consumer Liaison Committee of the American National Metric Council gives top priority to the identification of consumer concerns about metric conversion and to the development of mechanisms which will insure consumer representation during the transition period. This paper is a significant step toward the realization of these objectives.

The issue of deception was chosen as one of the most important concerns consumers will have in the early phases of conversion. To insure that the consumer viewpoint is represented on this subject, the Committee commissioned representatives of the National Consumers Congress and the National Consumers League to study the issue and prepare this report of their findings.

A draft of this paper was reviewed by approximately 100 national, state and local consumer groups across the country. Their comments were incorporated into a second draft which was circulated to ten of these groups for final review. In publishing this paper, the Committee has edited the manuscript for space and clarity only.

The Consumer Liaison Committee and the American National Metric Council do not necessarily agree with or endorse the findings and recommendations contained in this paper. We do hope, however, that this paper will accelerate and enhance the developing dialogue between consumer and business representatives on this and other issues that will emerge during the transition period. In addition, we hope that this paper will serve as a model for future consumer participation within the Council as other issues emerge in the conversion process.

Please feel free to write to the Consumer Liaison Committee at the American National Metric Council, 1625 Massachusetts Avenue, N.W., Washington, D.C. 20036, with your comments on this paper and/or any ideas you may have for consumer involvement with this or any other issues you feel deserve our attention. We hope to hear from you.

SUMMARY

On December 23, 1975, President Ford signed into law the Metric Conversion Act of 1975. This law provides that it is the policy of the United States to plan and coordinate the increasing voluntary use of the metric system. Lack of consumer acceptance constitutes a great potential threat to effecting conversion to the metric system (a process termed metrication) in this country. Convincing consumers that the changeover can be both necessary and beneficial to them is a most essential link in the chain of metric events. Consumer acceptance will not happen automatically. There are many important areas of consumer concern which must be approached with a genuine and serious attitude.

One genuine concern is the potential for deception during metrication. Metrication itself does not appear to be responsible for any particularly new or different ways to deceive the public. Fraud and deception will simply be that much easier to accomplish if consumers are ill-prepared for the change. Whether or not the deception is real or perceived, consumers who encounter what they perceive to be adverse situations could turn off or grow hostile to the presence of the metric system in the marketplace. It is the fear of being deceived or taken advantage of that is the main subject of this paper.

Consumers should be included in the planning of their own metric education. In addition, a consumer education program that does not include concrete learning experiences will be a waste of money. There are many real life situations where consumers can learn about the metric system. Virtually all segments of the marketplace have some responsibility for assuring a transition that is deception free and, as well, free of the appearance of deception. This report contains a checklist of over fifty specific actions that can be taken by manufacturers, packagers, advertisers, retailers, government, the media, and consumers.

The retail food industry is singled out for special attention. This report concludes that the process of buying food entails decisions based on the understanding of the units of measurement and price per unit. Since we all have to shop for at least some of our food on a regular basis, the retail food market comes into focus as one of the most likely arenas for learning about metric conversion.

PART I — THE PROBLEM OF DECEPTION

Many consumers are probably unaware of the coming change to the metric system. Among those consumers who are aware of the U.S. decision to go metric, attitudes appear to vary in direct relation to how much the person knows about the metric system of measurement. For example, it has been shown that consumers who have lived abroad where metric measures prevail are generally in favor of metrication here in the U.S. And in our schools where children are being taught metrics, the children are reported to be learning the system with no significant difficulties.

All consumers, regardless of their level of metric knowledge, will be concerned about getting fair value for their money as the U.S. goes metric. This concern will be especially strong during the initial stages of the change to metric, when consumers are the most likely to be uncertain about metric and their own ability to cope with the new system. Some consumers may feel that they are being deceived or taken advantage of.

It is true that businesses could in fact be engaging in deceptive or fraudulent practices. However, consumers may also perceive or believe that they are being cheated or deceived when no real deception or fraud exists.

In cases where an intent to deceive and/or defraud can be proved, a relatively definable problem would exist and could be resolved. The case of perceived deception is much harder to delineate. What factors caused the consumer to feel cheated or ripped off? Did the consumer expect to be cheated beforehand? Did the retailer or manufacturer unknowingly mislead the consumer? Was there some gap in communication between the consumer and the retailer? Did the customer or the retailer make an honest mistake which may have made the customer suspicious? All these questions and more must be considered when trying to understand the problems of consumers who may believe that they are being deceived when in reality they are not.

Whether or not the deception is real or perceived, consumers who encounter such situations could conceivably turn off or grow hostile to the presence of the metric system in the marketplace. Since lack of consumer acceptance is a great potential threat to effecting metrication in this country, convincing consumers that the changeover is both necessary and beneficial to them is perhaps the most essential link in the chain of metric events.

Consumer acceptance will not happen automatically. There are many important areas of consumer concern which must be approached with a genuine and serious attitude. Rational and sympathetic programs must be planned which will meet the needs of the American people. The people must participate in this planning and have an active role in the process of metrication. The primary fears a person may experience during the changeover to metric seem to fall into three areas:

(1) Fear of not being able to learn the differences between customary and metric measurements;

(2) Fear of not being able to adjust to and cope with using metrics in the marketplace; and

(3) Fear of being deceived or taken advantage of by the sellers of goods in the marketplace.

It is the third kind of fear – the fear of being deceived or taken advantage of – that is the main subject of this paper.

It will focus on two aspects – advertising and point of sale – and will, for these aspects, examine some existing forms of deception and fraud, to take a close look at the ways in which these practices may occur during the changeover to the metric system, and to suggest steps to ensure that deceptive practices are reduced or prevented.

1. Advertising

Misleading Use of Metric Terminology

Advertisers could purposefully or innocently misuse metric terminology, thereby increasing consumer confusion. Such advertising could have the effect of leading the consumer to imagine a bargain when there may be an actual loss. Imagine, for example, a retail carpet store that continues to advertise carpet prices by the square yard when competitors have started to advertise and sell by the square meter. Since the square yard is about 15% less than the square meter, the consumer who does not notice the difference in the unit of sale, may be deceived into thinking the carpeting sold by the square yard is a better value.

Offers involving "cents-off" may be used, especially when the new metric-sized packaging is introduced. Consumers would have a difficult time determining the actual savings resulting from a "cents-off" offer if the product in question had always been sold in customary units of measure. The problem of comparing six ounces of a product costing 89 cents with a new metric size of 200 grams of the same product at a special price of 87 cents would require a slide rule or hand calculator to solve. Is the difference in price of 2 cents a saving or not? In this instance, the metric amount is actually more than a 2 cents saving as you would be getting 30 g (18%) more product for 2 cents less.

It should be noted that consumers are always in favor of legitimate bargains, and would advocate the use of special offers whenever no conflicts exist with metrication. However, advertisers would be well advised to avoid these methods of soliciting business during the transition. The public interest would not be served in any way by the use of such sales techniques. It will be hard enough to compare customary and metric-sized products; any "cents-off" offer would make the situation even more confusing.

Clearly the process of metrication itself is not the villain here. Advertisers who mislead with the use of metric terminology and measurements are the real culprits, whether intentional or not. Yet, consumers who may feel insecure or afraid of their own ability to learn and cope with metric measurements could react negatively not only to the advertiser and the product, but also to the concept of metrication itself. It would be an uphill battle indeed to persuade any consumers who have encountered unfortunate metric experiences that metrication is really a simple and beneficial process.

Bait and Switch

Another form of advertising deception is known as "bait and switch." A product is advertised for sale that has many appealing qualities. But, when a consumer comes to buy that product, he is told that the product is not available for some reason. The sales person then directs the customer's attention to another product instead, trying to convince the customer that the other product is really what he needs after all. The other product might be an inferior version of the originally advertised product, or sometimes a more expensive item. During the transition period, "bait and switch" tactics might be used to move older customary products from an inventory, or to sell new metric sized products on the false premise that the consumer *needs* to buy the metric product. The implication that metric products will be superior to customarily measured products is a dangerous assumption. For the vast majority of consumer goods, customary products will continue to be useful in the same ways as before.

Replacement Parts Inventories

One of the most serious problems – real or potential – has to do with inventories of replacement parts. Consumers could be led to believe, through advertising, that spare parts for non-metric products will not be available as metrication progresses, thus encouraging the purchase of new goods that use replacement parts in metric sizes. To the extent this is actually the case (that is, inventory of non-metric replacement parts disappears too quickly) consumers will be ill-served. It will be important that manufacturers and distributors do indeed carry adequate inventories of non-metric spare parts for reasonable periods of time. It will also be necessary for manufacturers, distributors, and retailers to refrain from playing on the fears of consumers that they had better get rid of their old equipment on the grounds that replacement parts will not be available.

2. Point of Sale

Fraudulent and/or confusing practices could also occur at the point of sale. Point of sale problems involve the ways in which products are packaged as well as the ways in which products are sold.

Comparative Shopping

A salesperson might quote a customer a price for a given amount of a product in metric units. The customer unfamiliar with conversion scales would have a hard time comparing the price with customary units of sale. This customer must rely on the salesperson to provide the information, and in doing so becomes a prime target for deception. A disreputable salesperson could easily deceive this customer. A chart showing the price of equivalent amounts in customary and metric would be a useful tool for comparative shopping.

Package Differentiation

If the differences between a product's customary package size and the new metric package size are not made absolutely clear, several undesirable results might ensue. Retail store clerks might fail to notice that a package is a slightly different size, and innocently mark the package with the same price as usual. If the new metric package is slightly larger than its former counterpart, the customer pays a reduced unit price. But, if the metric package is slightly smaller, the consumer pays an unfairly high unit price. This situation actually happened in Canada in the case of sugar and was found to be not intentionally deceptive, but still very annoying. If the retail store was aware of the price marking and intentionally allowed an unfair price to be marked on the metric package, then fraud is an issue.

The mixture of customary and metric packages on store shelves is apt to confuse consumers. Comparison shopping is next to impossible between metric and customary sized products. Retailers are encouraged to exhaust existing supplies before placing metric packages on shelves.

Label Information and Terminology

The information on package labels is another area of concern. There is the potential for misuse and/or abuse of metric terminology. The information on packages may be confusing or unclear to consumers. In one study, twelve different identifications were found for the word "gram" alone on packages which were marked with both customary and metric units. This carelessness means little or nothing now. Products are marked in customary units and consumers are accustomed to making their purchases based on the familiar measures anyway. But, as more and more items are marketed in rational metric sizes and are marked only in metric units, such carelessness could result in a veritable epidemic of bafflement. Consumers who are trying to learn and cope with metric language could find the array of symbols and spellings terribly confusing. What began as harmless neglect could become a serious hindrance to consumer education if some check is not initiated immediately to avoid the proliferation of inconsistent terminology.

Slack Fill

Yet another area of potential deception is the problem of slack fill. New metric sizes of products which are packed with air space could contain even more air space instead of more product. Increased air space in a metric package at least creates the suspicion of deception.

Package Size

When package sizes are converted to a slightly smaller version of the customary counterpart, such as one pound (454 grams) becoming 450 grams, consumers may think they are being cheated, because the price will most likely not be decreased accordingly since handling and packaging

costs will remain the same. Because this situation could arouse suspicion among consumers, packagers and manufacturers are urged – where the difference is imperceptible – to convert to noticably larger or smaller package sizes and adjust prices accordingly. For example, consumers would likely prefer paying more for a slightly larger package (like 500 grams) than paying the same for a slightly smaller package.

3. The Problem for the Consumer

In most of the instances described above, consumers could seek assistance to find out about metric equivalents and resolve their problems whether real or imagined. But how will consumers know where to go to get reliable information? And, should the burden be on the consumer to have to continually double-check the information? The consumers right to information has been clearly established and should be preserved and protected in the framework of metrication. How can the possibility of deception be reduced or even avoided? What steps can be taken to pave the way for consumer acceptance of metrication and to preclude the possibility of consumer backlash in reaction to metrication? That is the subject of parts II and III.

PART II — TWO EXAMPLES OF CONVERSION IN THE UNITED STATES

Metrication can be accomplished in a way that serves the consumer, or it can be handled in a manner that leads to confusion. We present here an example of each to illustrate the point.

1. The Seven-Up Company

The experience of the Seven-Up Company in converting from customary measure to metric is a good illustration of the advantages that accrue from a well thought out and timely metrication program.

The recent recession with its consequent packaging and materials cost squeeze prompted the Seven-Up Company to reevaluate its soft drink packaging situation. In order to reduce packaging costs and "to project more positively the Uncola marketing image in our packaging"[1] the decision was made to develop a new shape, shorter bottle that would contain less glass and be less expensive. The consequent marketing problem of this shorter bottle competing with the competition's taller bottle of the same volume was solved by turning the problem to the company's advantage through metrication. Hard conversion to liter and half liter bottles was decided upon. In switching to these metric sized bottles, the company would actually be selling the consumer more Seven Up in the new shorter bottle. One liter is equivalent to 33.8 fluid ounces; one quart equals 32 fluid ounces.

There were several obvious advantages derived from the change to metric. First, the timing was excellent as it was clear that the United States' conversion to metric was inevitable. Changing to metric when Seven-Up was developing new bottles anyway was good business. Second, the initiative and leadership demonstrated by being the first in the soft drink industry to go metric was a solid boost to the marketing image and one that was capitalized on in the promotion campaign.

In addition, Seven-Up's metric bottles were priced the same as competitors' 16- and 32-oz. bottles in order to assure a marketing advantage. The consumer would actually be getting more for his money.

More importantly, the decision to change over in any given market was a strictly voluntary decision for the local bottler. To encourage bottlers to make the metric plunge, it was emphasized that the cost saving per case would offset the added ingredient cost and would enhance production efficiency. In addition, the company reimbursed bottlers a portion of their conversion costs.

A comprehensive marketing program and dramatic new packaging graphics assisted in arousing widespread interest and attention in the press. Metric education kits were made available to teachers throughout the U.S.

Seven-Up has been delighted with the response and reports that "our metric-sized bottles have exceeded the projected sales that would have been achieved without the packaging – anywhere from four to fourteen percent."[2] They attribute this success largely to the added value for the

consumer, while noting that the novelty of the package contributed to the success.

The Seven-Up Company's profitable switch to metric provokes several thoughts for other companies and industries considering a similar change. The change to metric was timed to work to Seven-Up's advantage as the decision to market a new bottle had already been made. The change to the new bottle gave the company the chance to modernize and make more efficient packaging while reducing packaging costs. The new shorter bottle produced increased inventory space and storage efficiency. Also, as less energy was required to make and transport the shorter bottles, the new bottles were comparatively less expensive.

Strong consumer response more than offset the costs involved in the switch, a response that Seven-Up attributes mainly to the consumer realizing that the new bottle was a better value for the money. This realization of added value overcame consumer skepticism about metric and reluctance to change. Other soft drink manufacturers have followed Seven Up's lead and are now marketing metric-sized bottles as well.

2. The Wine and Distilled Spirits Industries

Conversion in the wine and distilled spirits industries is in its early stages. Metric standards for the two industries have recently been adopted. After a four-year conversion period ending January 1, 1979, all wine sold in the United States must be sold in metric bottles. (Allowance is made for aging wine by excepting wine that has been certified as bottled prior to that date.) For the distilled spirits industry, metric bottles will be required beginning January 1, 1980 (with the same allowance for marketing spirits bottled in non-metric sizes prior to the mandatory date of metrication.)

In the wine industry, seven new metric sizes will replace 16 domestic and 27 imported wine bottle sizes. The new sizes are 3 L, 1.5 L, 1 L, 750 mL, 375 mL, 187 mL, and 100 mL.

For distilled spirits there will be six metric sizes: 1.75 L, 1 L, 750 mL, 500 mL, 200 mL, and 50 mL.

It is premature to forecast consumer reaction to metric wine and liquor bottles, but it is not impossible to make certain predictions.

In the instance of the wine bottle sizes, the 750-mL bottle is the base for measurement and approximates the common existing wine bottle in use (757 mL or a fifth). The 1.5-L bottle is about twice its size and the 375-mL bottle half its size, with the 187-mL being half of the 375-mL. But how can a consumer compare and evaluate something as awkward as 375 mL or 187 mL? The simplicity of the metric system would suggest rounded numbers such as 500 mL and 250 mL which are easily calculated on the base scale of 10. Several reasons are given for choosing the awkward sizes. They are in common international use now and there are problems with marketing internationally with different measurements. But from the practical viewpoint of the person buying the wine, the simpler the size, the more it makes sense. And too, the largest size, 3 liters, is equal only to 0.8 gallons. Wine has regularly been available in 1 gallon (25% more) and sometimes larger sizes. This reduction in maximum size might appear to be

an economic disadvantage to some consumers in favor of the wine industry since larger quantities usually sell for lower unit prices.

The metric bottles for distilled spirits also raise some questions. Into what rational metric sequence does 1.75 liters fit? If the intent was to approximate the current half gallon (1.89 liters) then the 2-liter bottle would be the more logical choice. A 2-liter bottle presents manufacturing problems and predicted extra costs, but makes much more sense from the point of view of the buyer comparing sizes. The 1.75-liter bottle is also potentially deceptive as it would appear to be the same size as the present half gallon yet contains 8% less. It is illogical to increase the quart by 6% to one liter yet not increase the half gallon (2 quarts) to 2 liters.

There are stronger resons for the adoption of the 200-mL size as opposed to the 250-mL as a replacement for the half-pint (237 mL). They include adoption of the 200-mL standard by the European Economic Community and the fit of the 200-mL bottle into a 1-2-5 metric scheme. Yet, to the customer buying liquor in the store, the 200-mL bottle may raise the same question of deception when compared to the half-pint that the 1.75-L does with the half-gallon.

If consumer acceptance of the metric scheme is the desired goal, the wine and spirits bottles present the potential for confusion and anger. Unfortunately, these fears are already beginning to materialize. Liquor stores in some parts of the U.S. are now selling new 1.75-liter bottles for the same price as the half-gallon sizes (8% more). Newspaper columnists have even begun to write about this new "metric rip-off."

PART III — CHECKLIST OF PREVENTIONS, REMEDIES, RECOMMENDATIONS AND OTHER ACTION*

If consumers are to be expected to accept metric, they must be shown that metrication is both necessary and beneficial for the United States and for consumers as well. The primary reason for potential consumer resistance to metrication, and for the fear of deception is the fear of not being able to master the new system. This fear results in feelings of inadequacy and insecurity in using the system, and may lead to the fear of being deceived or taken advantage of.

Therefore, the following checklist of remedies is offered to all groups involved in planning for and implementing metrication:

I. Manufacturers – Packagers

1. Initiate contacts with consumers and include consumers in plans for conversion.
2. Move to hard conversion, preferably. Hard conversion means rational metric size packaging or measures.
3. Use correct metric terminology, spelling, and symbols in a clear and consistent manner.
4. Make metric sizes slightly larger rather than smaller than the customary sizes they are replacing.
5. If smaller size is used, be prepared to explain *why*.
6. Standardize sizes rationally (even metric sizes, i.e., 1 kilogram, 500 grams, etc.) and reduce the number of sizes where possible. Maintain a reasonable range of sizes, to allow adequate consumer choice.
7. Indicate *new metric sizes* on package in a highly visible place.
8. Print any additional metric information on package simply and accurately.
9. Coordinate target dates for conversion with related products under proper auspices.
10. Meet scheduled target dates.
11. Coordinate product conversion with point of sale information.
12. Coordinate information, instructions for use, combining with other products, recipes, kitchen equipment, etc.
13. Maintain unit price value at phase-in.
14. Price goods fairly.
15. Provide information to the retailer and consumer through all available channels.

*The Appendix to this report contains a selection of sample labels, and other visual aids that the reader may wish to refer to in reading this section as illustrations of many of the points made.

16. Supply parts for both old and new products for a reasonable time whenever possible.

II. Advertisers

1. Avoid misleading or confusing ads.
2. Educate consumers regarding new size and cost, comparing with old whenever feasible.
3. Keep all wording in ads appropriate to the level that can be understood by all consumers. (Level may change as consumers become more familiar with terminology.)
4. Urge consumers to discuss any concerns they might have with manufacturers or retailers.

III. Retailers

1. Have concise, clear, accurate and relevant point of sale information in a visible location for consumers.
2. Initiate contacts with consumers and discuss plans for metrication. Include consumers in planning.
3. Coordinate point of sale information with the introduction of metric products.
4. Train sales and customer relations staff to understand metric, especially regarding products in a particular store.
5. Have simple cost and measurement comparisons available.
6. Sell old stock before putting metric products on shelves whenever possible.
7. Keep prices of old products the same. (When a new metric product is stocked next to the old version, the price of the old version should not go up just because the metric price is greater.)
8. Stock parts for both old and new products for a reasonable time whenever possible.
9. Price fairly. Maintain item pricing and unit pricing accurately and up to date.
10. Separate metric products from customary ones on shelves.
11. Avoid misleading or confusing explanations.
12. Maintain regular selling practices with same pricing policies, including same methods of payment as before.
13. Make sure scales and other measuring equipment are appropriate to weigh or measure the products for sale. Check for accuracy often, and train staff to use new devices.
14. Exert pressure on competitive businesses to adopt fair and open attitudes toward consumer concerns and problems.
15. Use trade associations to develop and distribute guidelines for business practices during the transition period.
16. Exert influence on manufacturers and packagers to opt for hard conversion (rational metric sizes).

IV. Government

1. Initiate contacts with, and involve consumers in, policy making and planning for conversion.
2. Seek research by qualified consumers, consumer or public interest groups on issues having direct impact on consumers.
3. Make funds available for consumer studies or research.
4. Establish guidelines and parameters for independent consumer input and inform consumers of the information or input desired. This will avoid haphazard, piecemeal and inefficient gaps and/or overlaps in the consumer input process.
5. Include consumers when designing informational materials to be used for consumer education.
6. Keep all informational publications for consumers consistent and concise.
7. Utilize existing consumer protection agencies as vehicles for dissemination of information.
8. Set firm guidelines for industry conversion especially regarding rational standardization of packaging and recommendations for hard conversion.
9. Standardize weights and measures guidelines for states and interstate commerce.
10. Enforce any regulations on metrication with prompt, effective action.
11. Monitor to guard against the possibility of anticompetitive behavior during metrication.
12. Establish or designate an agency or office to receive consumer complaints and suggestions and to involve consumers and consumer groups.

V. Media

1. Educate consumers and business. Motivate people to want to learn about metric.
2. Keep consumers posted on the progress of metrication. Reassure the public that not everything will change and that some things have always been metric.
3. Be a watchdog over business practices.
4. Monitor ads. Do not use advertisements which seem confusing or deceptive. Set guidelines for advertisers and insist that they stick to your standards.

VI. Consumers

1. Become informed about the metric system and its effect on consumers.
2. Contact manufacturers and retailers to initiate discussions about their policies for metric conversion and make your concerns known to them before they have made their decisions.

3. Contact the Consumer Liaison Committee of the American National Metric Council, 1625 Massachusetts Avenue, N.W., Washington, D.C. 20036, to express your ideas and concerns.
4. Contact the U.S. Metric Board to express your ideas and concerns.
5. Contact local complaint centers and consumer affairs offices to get involved or find out what steps they may be taking to prepare for metric-related problems.
6. When shopping, ask about point-of-sale information; insist on accurate and complete information about the products you buy.
7. If you have a problem, report it to a local complaint center.
8. Consumer groups can use newsletters or publications to inform readers of consumer issues regarding metrication.
9. Remember that you have a right to metric information and that accepting your own responsibility for becoming informed about the metric system will provide the most protection against anyone taking advantage of you.
10. Work with legislators to remove prohibitions and legal restrictions for moving to metric sized packages.

VII. Consumer Complaint Centers – Local Government Consumer Affairs Offices

1. Train staff to understand the metric system and handle metric related issues.
2. Seek consumer and business viewpoints on metrication. Provide a community forum for the exchange of these viewpoints.
3. Study any local problems which require attention during phase-in. Supplement educational materials with special notices or articles about local problems or positive steps being taken in conversion process.
4. Develop guidelines for consumer complaints about metrication which will tell consumers what to watch out for, etc.
5. Act promptly and appropriately on any unfair practices reported.
6. Keep a record of complaints associated with metrication, and pass the information on to other appropriate parties, e.g. the media or trade associations for industry, government agencies, U.S. Metric Board, etc.
7. Work with legislators to remove prohibitions and legal restrictions for moving to metric sized packages.

VIII. U.S. Metric Board

1. Monitor: The U.S. Metric Board should monitor the conversion process to ensure that appropriate consumer consideration is given to all metrication activities.
2. Metric Symbol: A metric symbol should be developed to be used as a seal of approval by the U.S. Metric Board on information or products that have been shown to be reliable and accurate sources of metric information.

PART IV — CONSUMER EDUCATION AND INVOLVEMENT: SOME SUGGESTIONS

A. An educational program must be designed that will help consumers overcome their fear of conversion and insure consumer acceptance of and adjustment to the metric system in their everyday lives.

Any program of consumer education must first persuade consumers that they *can* learn the system. Consumers must be informed about how simple the system really is, and how few different weights and measures they will need to know. Whatever literature is printed from which consumers learn this information should be consistent and should clearly explain the basic metric terminology and equivalents which are the core of the metric system. There are only four basic units which most consumers will have to deal with – liter (volume), meter (length), kilogram (weight), and degrees Celsius (temperature).

B. Consumers should be involved in every level of metric policy-making decisions. Consumers should be included in the planning of their own metric education.

The success of the metric conversion effort requires the complete involvement of consumers. Consumers have a right to be involved in the planning of a process that will have such an all-pervasive impact on their lives.

C. A national resource center should be established to provide consumer oriented information.

The center could, for example, provide reliable information concerning particular policies being implemented both by government and various sectors of the economy; it could develop training aids and references; it could undertake research projects as needed; it could service the multitude of existing consumer offices, public and private, with reliable, up to date information on metrication; and it could service the many consumer organizations that decide to play an active role in assuring a deception-free conversion.

D. While the retail food industry has a special responsibility to help assure a smooth, consumer-accepted conversion to metric, many other commercial and industrial segments can and should also fulfill their responsibility.

The major advantages of going to the metric system will accrue to business and industry. For this reason, and also because it is business and industry that are behind the changeover to metric, it is up to these same groups to work to insure a trouble-free conversion to metric for all consumers.

E. The retail food industry offers the greatest potential for assuring a deception-free, consumer accepted conversion to the metric system.

One out of every five consumer dollars is spent on food, and the average person shops at least once a week for food. The process of buying food entails decisions based on the understanding of the units of measurement and price per unit. A consumer doing the weekly shopping

uses weight, length, volume and even temperature measurements every step of the way. Since everyone has to shop for at least some food on a regular basis, the retail food market comes into focus as one of the most likely arenas for educating consumers about the metric system.

There are many reasons why the grocery store could be the most centrally effective metric classroom for consumers. The food sold is generally arranged on shelves or in bins by product category. Dairy products are together in one area, meat, poultry and fish in another, produce in another and so on. Because consumers tend to buy the same types of products over and over, and usually as often as once a week, their learning experience would be continually re-enforced.

With careful planning, food packaging could be converted in a gradual and rational manner. This gradual introduction of metric sized products could be accomplished in a way that gives consumers time enough to adjust to each new product change before the introduction of another. The order in which the conversion of particular products takes place could be agreed upon by all food manufacturers and consumer representatives in consultation with other interested groups and should be a meaningful progression which would contribute to consumer understanding, not to consumer confusion. This process should, of course, be coordinated with the metrication plans of other industries.

Conversion of the retail food industry as the core of the learning experience is recommended as the most efficient and painless way to educate consumers about metrication. There are problems with this area of the economy which will need to be ironed out, but none of the problems are insurmountable. The retail food industry could lead the way in educating consumers to accept and use the metric system.

The retail food industry must decide to undertake this challenge. Once this decision has been made, the questions of reduced numbers of package sizes and rational packaging standards must be resolved. Plans for converting products should be coordinated with other retail products and economic sectors, and an overall timetable for product introductions should be prescribed. Plans for conversion should be coordinated with government guidelines and in accordance with metric-related regulations. Consumers should be involved in the planning and implementation of the entire process of metrication and metric education.

APPENDIX 1 — THE EXPERIENCE IN OTHER COUNTRIES

The available literature of how other countries dealt with the consumer problems associated with conversion to metric was reviewed from the consumer point of view. This appendix summarizes the available literature. While it goes beyond the deception issue, it is included because it (1) puts the problem of deception in its proper perspective, and (2) shows the interrelationship between problems of deception and problems of inadequate information and education.

A. PUBLIC INPUT

If there is one overall lesson to be learned, it is that public participation at every stage of the planning process for conversion is crucial, and the U.S. would do well in heeding the advice offered by other countries in their conversion to the metric system.

Public input, understanding and awareness of the metric system is essential for a country's successful conversion to a new system of weights and measures. As one British author noticed about lack of public understanding, "...we became increasingly aware of the clouds of indifference surrounding the metrication of our weights and measures among people we met ... there are still very considerable secondary areas of uncertainty and confusion."[3] The U.S. has a golden opportunity to learn from, and avoid, such problems.

"Progress to metrication cannot be a haphazard affair, left to the individual whim and decision. If that were to happen it could cause confusion throughout industry and would present untold difficulties to the consumers."[4] Relatively few problems, including deception or the appearance of deception, were found in countries which planned carefully for metrication, and included the consumer in that planning.

B. CONSUMER PROBLEMS

The problems with metrication, from the consumer point of view, can be summed up as follows: Unfamiliarity with the metric system and imperial (British system of weights and measures) equivalents, causing consumer resistance; less contact between the consumer and the shopkeepers, a modern phenomenon, necessitating greater shoppers' self reliance and shelf information, and increased metric education; timing conversion to confuse consumers as little as possible; changes in familiar package sizes which necessitiates a new sense of value for quantity; inflation and change of sizes causing consumers to mistrust changing prices, and think they are being deceived; and general concerns with changes in items bought daily by customers. These areas should be carefully considered in the planning of metrication.

Consumer resistance has many causes, which must be dealt with if a conversion to metric is to be successful. The Australian government found that "Opposition to the change is greatest among those who know the

least about it and one of the most intractable problems is to overcome the psychological block 'I will never understand metrics.' "[5]

The senior advisor of Australia's Metric Conversion Board cited five main fears consumers have of metrication: ". . . ignorance of why the change is being made; how it will be implemented; lack of appreciation for the measurement involved in the consumer context; lack of appreciation for how little assistance is required by the consumer and lack of information on the nature and extent of the assistance which will be provided; inability to make reasonable comparisons, of quantity and price during the transitional period when both imperial and metric products are offered for sale; almost total lack of awareness of the advantages which can accrue and the present inefficiencies and practices which can be eliminated or improved with metric conversion as the catalyst."[6]

The public sees change as a nuisance which is only overcome with exposure and first hand experience with metric measurements. But progress and success depend heavily on public acceptance. So there is a great need for publicizing metrication and educating all segments of society.

Canada realized, as did many other countries, "It will be an important element of the process of conversion to ensure public understanding of the desirability of the objectives, of the nature of the changes intended, of the complexity of timing and of the process of change."[7] As stated in a British publication, governments realized it was their ". . . responsibility to inform all sectors of society about the metric change . . . We have to familiarize the general public with the metric changes which will affect them. To meet these obligations we must have an effective information effort."[8] That information must be directed at helping the consumer in coping with daily activities. A July 1975 survey in Britain showed that 4 out of 5 adults relied on government sources for the necessary information on metrication.

C. PUBLICITY AND EDUCATION FOR METRIC

Reading aids abound in all recently converting countries, such as Canada, Australia, Britain, New Zealand, and South Africa. Thirty-two special interest leaflets (sewing, groceries, wood and lumber, etc.) were published in Britain alone. Wall charts with large easily read conversions were posted in stores and public places everywhere. Pocket aids, booklets, bar chart comparisons, quarterly bulletins, modular displays, conferences, question and answer sessions, films, museum exhibitions, and even "estimate in metric" competitions were used to publicize the conversion. Visual aids were posted everywhere, sent through the mail, and made available in public places.

The media were also very involved in the metrication of European countries. Television and radio aired commercials, panel discussions, and family shows during prime time. Newspapers and magazines also devoted space to the issue in the form of articles, editorials, and ads. Such extensive involvement by the media was found to be crucial and one of the most important elements of successful conversion.

Small businesses are heavily involved with the general public. Britain realized the need to inform them of progress in metrication. "It is our intention to turn our attention to the industries more directly linked with the customers. We shall intensify our efforts to inform the small businesses which are not normally in close contact with the activities of industrial and trade organizations. It is our intention that our information programs should be progressively directed towards the needs of the general public."[9]

Publicizing metrication is one form of facilitating public awareness; education is the other. Various forms of education were found necessary in converting countries – education for adults and the elderly who must learn a new system; education for workers in the form of on-the-job training; and education in schools of all levels.

Adult education is perhaps the hardest, as people are reluctant to change from a system which suits them. Australia and Britain found that until metric measurements were used in stores, enrollment in public education was low. People resisted conversion until they were forced to learn it. In Britain, concern for educating the elderly was great enough to cause the Commission Travistock Institute of Human Relations along with the National Opinion Polls Limited to "conduct a survey into the metric information needs of the elderly during the change over."[10] The problem in adult education was arousing public involvement before the confusion arose from seeing metric in stores.

The basic goal of education is to get the public to "think metric," instead of in imperial measures. Otherwise working with the units becomes too difficult to be worthwhile. Teaching the public metric is like teaching them a foreign language – they must be taught to carry on necessary functions using the new metric language.

D. GOVERNMENT INVOLVEMENT

Government protection for the consumer was repeatedly assured in British Metrication Board reports. They prepared to consult consumers on methods of enabling value comparison, assured measures for policing of pricing and sizing, etc. Most foreign governments agreed their role was essential in protecting consumers. The Australian government also suggested a high liaison between state and federal governments.

Among protections which British and Australian governments offered were: uniform units and standard measures provided by the Weights and Measures Act; weighing and measuring instruments checked and verified by state authorities; strictly policed uniform packaging legislation, marked clearly and in view; strictly controlled units like liters and milliliters only for liquids, like milk, and grams and kilograms only for weight staples like butter, etc. in standard rounded quantities; other items in pattern sizes like 125 g, 250 g, 350 g, and 500 g to allow ready comparisons; prosecutions where improper package volume labels are found; preventing false advertising; consumer affairs bureaus for consumer protection, as well as Metrication Boards or Metric Conversion Boards (MCB)."[11]

Australia, Britain, Singapore, New Zealand and East Africa all agreed upon the necessity of a Metric Conversion Advisory Board. They all agreed the board should be a small group of around a dozen nominated

individuals, whose ". . . prime function is to help plan, guide and facilitate the nation's progressive conversion to metric weights and measures. Its powers include tendering advice on the need for legislation relating to metric conversion, making information available, and reporting to the appropriate authorities any attempts to take unfair advantage of the public in the course of conversion.[12]

E. CONSIDERATIONS FOR BUSINESS

1. Timing

Timing of such a changeover was perhaps the biggest obstacle encountered by foreign countries. They felt the conversion should be quick and not slow. All the converted (ing) countries agreed "there can never be an M-day on which the country or retail trade as a whole goes metric."[13] However, it was found best to convert commodities or sectors of the business trade one-by-one, and have conversion within each industry quick and consistent.

Too long a conversion period caused confusion and expense while too fast a conversion often lost some support. Obviously this was a very touchy area in conversion, and one which needs careful study and planning. Conversion by sector was one method generally successful in most foreign countries.

2. Retailing

The British Metrication Board also commented on retailers' responsibilities. Since retailers generally change to suit themselves, the British Metrication Board feared, ". . . a risk that metrication will lead to an erosion of the protection afforded the shopper."[14] Britain therefore maintained that the retail sector must show "consideration of the method and timing of metrication best calculated to offer the least inconvenience and confusion to consumers."[15] The Australians felt that the retailers should consider: ". . . developing the capacity of sales staff to work easily and accurately in metrics and to answer the questions customers ask; displaying the charts and posters needed to help the customers in their metric shopping; and presenting a metric image in advertising, showing only a metric size and a metric price since this helps to persuade customers to think and buy in metrics."[16]

3. Labeling

Labeling of items during the transition is a crucial part of that conversion. Two methods of labeling can be used; dual labeling (which shows both the metric measure and its imperial equivalent) or showing the metric measurement only. A disagreement between Australia on the one hand, and Britain and Canada on the other, occurs on this issue of metrication.

The British and Canadians felt dual labeling was the best method, and had regulations to require it. Although they both suggested a date by which dual labeling should end, they stated, "Our current view is that

customers' interests are likely to be best served if manufacturers dual mark all pre-packed foods and continue to do so for some time, even after round metric quantities have been introduced. In time, familiarity with metric units will make it unnecessary to show the imperial measurement."[17] The British and Canadian Metrication Boards felt dual labeling would help the consumer relate metric to imperial measures and aid in visualization and use of metric measures.

Australia disagreed. They felt dual labeling did not help. In fact, they felt dual labeling encouraged consumer resistance, because consumers did not have to learn metrics if the imperial measures were given too. In Australia's opinion, people learned faster when they had to learn metric to maintain control over values. They suggested labeling all items in rounded and specific standards, and letting the consumer learn first hand what metric really meant. The consumers would easily learn to "think metric" instead of trying to convert in their heads.

4. Sizing and Pricing

Sizing is also of great concern in metrication. Standard metric units should be chosen to coordinate all areas within the country as well as with other countries, in order to reap benefits. In Britain, some manufacturers converted directly from imperial to metric, which meant difficult figures for the consumer to deal with. This was more confusing to consumers than changing the package sizes to rounded metric quantities close to old imperial sizes. Comparing values and learning metric was easiest for consumers when standard metric quantities were used. Governments in foreign countries suggested using liters, half liters and their multiples for liquids (beer, cider, milk, etc.) and grams, kilograms and their multiples for weight.

Meaningful pricing systems have always been of importance to consumers. During conversion, there was great concern in all countries that wholesalers and retailers would take advantage of consumer ignorance to overprice. Many precautions were taken to avoid such problems, and as the Australian MCB said, "The board believes that with the measures being taken and with the active interest and wide publicity accorded any allegations of unfair practices, the consumer is unlikely to be disadvantaged by metric conversion."[18]

Such protections included the Prices Act of 1974 in Britain, a price control system by the Department of Prices and Consumer Protection, involvement of Metrication Boards, and the media's concern. Fear of deception was found to be a protection in itself. "The media and the public custom in the marketplace is such that for most organizations fear of being found out is a significant deterrent to unfair practices."[19]

In fact, very few cases of price cheating occurred, although many alleged cases were brought to the Conversion Boards. Some commentators believe that the real problem was the overpublicizing of *alleged* violations, giving a false impression of the number of real deception cases. The consumers thought they were being deceived when they were not, creating unneeded resistance.

F. CONCERNS OF CONSUMERS

1. Food Purchasing

The greatest area of concern was found to be related to food and groceries. In pre-packed food, the biggest decision was in the areas of labeling, discussed earlier. The problem was to use the method which allowed housewives to compare values, while convincing them to use the new system.

Foods sold in units like twelve eggs, a six-pack of soda, twenty-four cookies, etc. did not affect the consumer, as long as careful price checking is done. Weights might change slightly, but would not affect the amount a buyer needed.

Fresh fruits, vegetables, and meat presented a new problem. These foods are bought in cents per pound. Since complete conversion within an entire country could not possibly be simultaneous, metricating countries found some shops using metric while other shops in the same area were using imperial measurements. This caused great confusion to the consumers in their ability to compare values. Australia's answer was regional conversion, so that all grocers within a customer's community would use the same system, converting at a specified time period. This allowed consumers to compare values without difficult and impractical calculations.

Bakery products presented few problems. Many items like rolls, cupcakes, etc. are bought in units anyway. The real concern was standard sizing for loaves, etc., and careful price control.

2. Cooking

As for cooking utensils, appliances, and recipes, all were affected by metrication.

Converting old recipes could prove very difficult, as direct conversions result in very awkward numbers. In Australia new cookbooks were written in metric, but utensils remained dually marked (one of the few dual labelings used) to allow old recipes to be used also. Conversion charts to tape onto stoves avoided some problems there.

In writing new cookbooks, Australia and Britain recommended standard quantities for the new metric quantities, to ease the change. Direct conversions were ruled out. The new cookbooks were used in school home economics courses, in accordance with the schools' teaching of metrics.

3. Clothing

Clothing is another consumer concern. When people are accustomed to measurements in inches, it is hard to see themselves in centimeters, which are much larger numbers due to conversion factors. The question of whether or not to use dual labeling again presents itself here, each country maintaining their position.

For items like women's clothing which is bought by size codes like 6, 8, 10, 12, etc. countries agreed that keeping these code numbers is best. The change from inches to rounded centimeter equivalents is so slight that the

fit, which is perfect on few women anyway, would not be noticeably affected. It was suggested that this is an ideal time for standardizing these codes throughout the world.

Patterns, yarn and fabric must also change with metrication. Patterns must convert to allow for metric widths in fabric and weights in yarn. The fabric and yarn themselves must be converted also. Old patterns present the same problem of messy conversions. Simultaneous changes of patterns and materials helped minimize the housewives' problem.

4. Transportation

Automobiles and related areas like gas, oil, roadsigns, and maps undergo changes to metric also.

Roadsigns are the first concern. Speed limits are a dangerous area to tamper with, so change needs to be done with extreme care. A quick conversion closely coordinated with car manufacturers for speedometer changes was found best in Britain and Australia. In both countries the signs were distinct and widely advertised. Motorist pamphlets showing the new and old signs as well as wide media advertising prevented any major problems.

Speedometers and odometers were the main changes affecting automobiles and were closely coordinated with road changes. Wide use was made of overlays, which are relatively cheap, to convert odometers and speedometers in older cars.

Gas, which is usually bought by the tankful or in dollar quantities, was not a real problem. A dollar's worth in gallons is exactly the same as a dollar's worth in liters. Governments watched prices. This was found to be an easily convertible area.

Maps were either printed in metric or printed with conversion charts included. The countries coordinated map changes with the rest of the automotive areas.

5. Other

Health is of utmost importance to everyone. Conversion in this area also needs extreme care in planning. Conversion in medical schools and hospitals usually occurred early in the process, and has little effect on the consumer anyway. Careful training of employees took care of most of the problems in that area. Items like thermometers and prescriptions are areas which affect consumers. A mother must be taught that it takes less of a rise in ^{o}C for a child to have a fever than in ^{o}F. A pamphlet distributed in Australia was one method of carefully and clearly explaining this to the public. But all agreed that the health area requires a great amount of attention in public education.

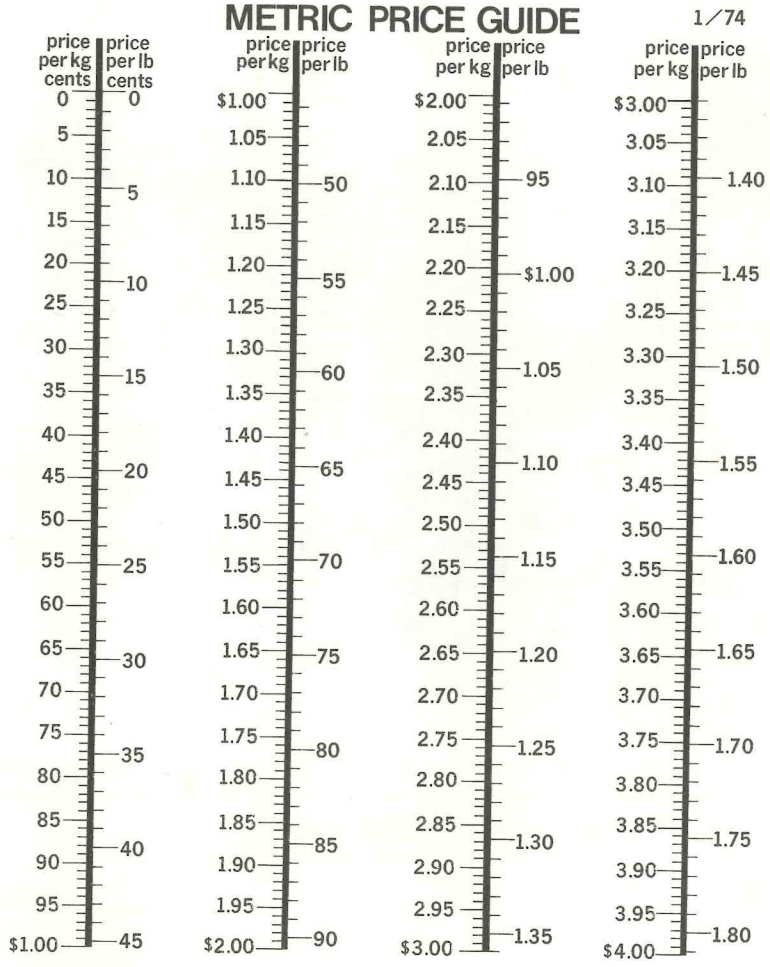
Australia used recreational facilities to aid in their conversion process. Early conversion of such recreational items as playing fields, racetracks, ball sizes, etc. involved the public in metric measurements. Exposure in a pleasing pastime, they felt, would take some of the strain out of learning the new system of measurement.

Of course the mail was also affected. The problem of whether to round the letter weight limit up or down (the current limit of 1 oz. equals an uneven 28.35 g, a messy number to deal with), caused some disagreement. In overseas mail, the change caused a 4 g difference, so a price adjustment was made in Australia.

Even the weather service was affected by metrication. Change from Fahrenheit to Celsius caused some confusion. A new sense of warm and cold is necessary since 30°F is quite chilly while 30°C is warmer than room temperature (30°C equals 86°F). Wind speed, barometric pressure, etc., are all affected. Australia's Commonwealth Bureau of Meteorology published a pictorial pamphlet on all aspects of weather which was very helpful. Such items are helpful and necessary.

APPENDIX 2 — AIDS TO COVERSION FOR CONSUMERS

Changing to a new system of weights and measures is a major process which affects all members of society in their day-to-day existence. In converting to metric the U.S. must consider this and involve the public in a campaign for understanding by allowing public input, education and awareness. The lessons to learn from other countries are invaluable and open for use. The following pages contain sample aids to conversion for consumers including examples of pamphlets designed to help consumers as well as examples of effective and non-effective food labels.



1. Chart showing price per kilogram and equivalent price per pound. This type of table could serve as point-of-sale information in lieu of dual unit pricing.

METRIC INFORMATION

PAINT

Australian Paint Manufacturers' Federation

NORWICH HOUSE,
6 O'CONNELL STREET,
SYDNEY. 2000

DIMENSIONS OF METRIC PAINT CANS		
	Overall Diameter	Height
20 litre	305 mm	358 mm
10 litre	227 mm	289 mm
4 litre	179 mm	192 mm
1 litre	110 mm	133 mm
500 ml	90 mm	103 mm
250 ml	75 mm	79 mm
100 ml	68 mm	44 mm

Diameter is the outside diameter at the top and bottom seams.

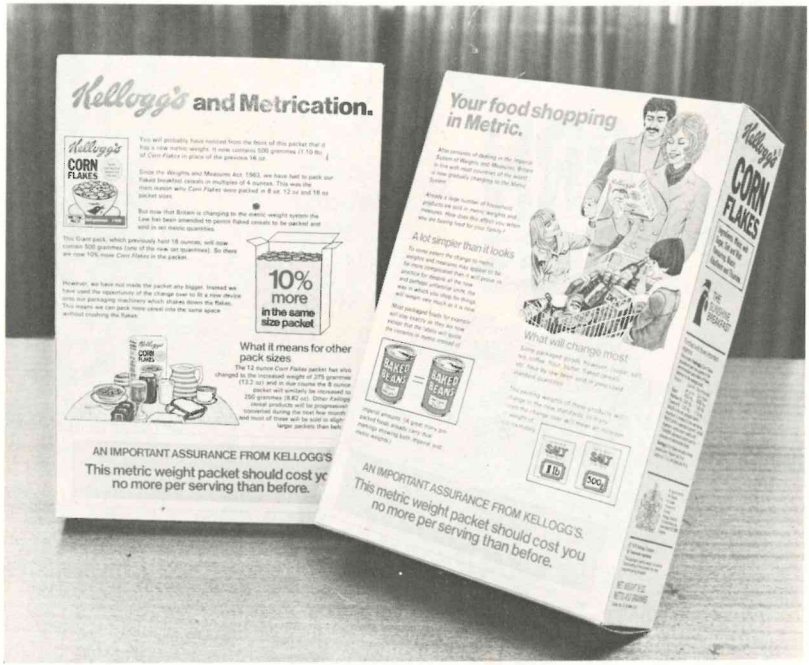
Height is the overall height of the can.

SPREADING RATE CONVERSIONS

SQUARE FEET TO SQUARE METRES	
square feet	square metres
100	9.29
200	18.58
300	27.87
400	37.16
500	46.45
600	55.74
700	65.03
800	74.32
900	83.61
1000	92.90

2. This is a sample of a handout designed for Australian consumers. Similar handouts on specific products would be effective point-of-sale information for U.S. consumers. (Note spelling is preferred Australian usage.)

3. Package Labels: A Good Example
These two views are the front and back of a "metric pack" of Kellogg's Corn Flakes on the market in England. This is a good example of a clear, complete package label which conveys accurate and relevant information to consumers. (Note spelling is preferred British usage.)


Kellogg's and Metrication.
CORN FLAKES
10% more in the same size packet
What it means for other pack sizes
AN IMPORTANT ASSURANCE FROM KELLOGG'S
This metric weight packet should cost yc
no more per serving than before.
Your food shopping in Metric.
A lot simpler than it looks
What will change most
BAKED BEANS
SALT
AN IMPORTANT ASSURANCE FROM KELLOGG'S.
This metric weight packet should cost you
no more per serving than before.
Kellogg's
CORN FLAKES
THE KELLOGG BOARD

3. Package Labels: A Good Example (Continued)

4. PACKAGE SIZES: AN EXAMPLE

This package of sugar was marketed in Canada. The words "New Metric Size" and "2 kg" illustrate a good example of package labeling. The package however appeared to be the same size as it's former counterpart, the 5-pound package (2 kilograms is equivalent to only 4.4 pounds). The price for this "2 kg" package should have been less than the old 5-pound package however pricing errors occurred when shelvers improperly marked the "2 kg" bags with the same price as 5-pound bags because the bags looked similar. Consumers complained and refused to buy the over-priced package until price corrections were made.

FOOTNOTES

[1]Address of Ben H. Wells, Chairman of the Board and CEO, The Seven-Up Company, to the American National Metric Council, Monday, April 5, 1976.

[2]Ibid.

[3]Measure for Measure: A Viewpoint of Metrication, by Mary Baker, London, Conservative Political Centre, 1971, p. 5.

[4]Metrication, Department of Trade and Industry, February 1972, London, Her Majesty's Stationery Office, p. 2.

[5]Metric Conversion in Australia, AFA Harper, Metric Conversion Board, Australia March 1973, p. 5.

[6]"Metric Conversion for the Consumer" by W.H. Broadbridge, p. 122.

[7]*White Paper on Metric Conversion in Canada,* Government of Canada, Minister of Industry Trade and Commerce, January, 1970, p. 21.

[8]*Going Metric: Looking Ahead,* Metrication Board, London, Her Majesty's Stationery Office, 1972, p. 73.

[9]Ibid.

[10]*Going Metric:* Report of the Metrication Board for the Year Ending December 31, 1975. London, Her Majesty's Stationery Office, p. 14-15. It is interesting to note that the United Kingdom's study of the elderly found that problems were no different for them than for anyone else.

[11]"Metric Conversion for the Consumer" by W.H. Broadbridge, p. 125-6.

[12]*Metric Conversion Board: Second Annual Report for Year 1971-72,* Parliament of the Commonwealth of Australia, 1972, p. 2.

[13]Department of Trade and Industry: *Metrication.* February 1972. London, Her Majesty's Stationery Office, p. 15.

[14]Measure for Measure: A Viewpoint on Metrication, by Mary Baker, London, Conservative Political Centre, 1971, p. 12.

[15]Colone, J.S. Vickers, *Making the Most of Metrication.* Gower Press, London, 1969, p. 79.

[16]"Metric Retailing: W.M. Tollex, MCB Wholesaling and Retailing Sector Committee, p. 142.

[17]Metrication Board, *Going Metric: Looking Ahead,* London, Her Majesty's Stationery Office, 1972, p. 67.

[18]*Metric Conversion Board: Second Annual Report for Year 1971-72,* Parliament of the Commonwealth of Australia, 1972, p. 13-14.

[19]"Metric Conversion for the Consumer" by Mr. W.H. Broadbridge, Senior Advisor MCB, p. 124.

GLOSSARY

basic units of the metric system – meter, kilogram, liter, degree Celsius

customary system – the foot, pound, gallon, degree Fahrenheit system presently used in the U.S.

degree Celsius – unit of temperature. Symbol: °C. 0°C is equivalent to 32°F (the freezing point of water) and 100°C is equivalent to 212°F (the boiling point of water). A Celsius degree is 1.8 times larger than a Fahrenheit degree.

dual dimensions – the expression of dimensions in both customary and metric units of measure.

dual labeling – the use of both customary and metric designations on labels.

hard conversion – changing the actual size of a product so that its measurements are in rounded metric sizes.

ISO – International Organization for Standardization. An international organization whose objective is to promote the development of standards for worldwide use.

kilogram – base unit of mass (weight). Symbol: kg. The kilogram is equivalent to 1000 grams and is approximately 2.2 pounds.

liter – unit of volume or capacity used mainly to measure quantities of liquid or gaseous materials. It is equal to a cubic decimeter. Symbol: L. The liter is 6% larger than a quart. A smaller unit is the milliliter (mL) which is 1/1000 of a liter.

meter – the base unit of length. Symbol: m. The meter is equivalent to 39.37 inches. Smaller units are the centimeter (cm) which is 1/100 of a meter (a little less than 1/2 inch) and the millimeter (mm) which is 1/1000 of a meter (a little more than 1/32 inch). The kilometer (km) is a larger unit and is equivalent to 0.62 mile.

metrication – the process of converting to the metric system.

rationalization – the process of adopting sizes based on logical increments that minimize the variety in inventory stocks.

rounded metric sizes – sizes expressible in simple numbers such as 500 g, 1 kg, 2 kg, 500 ml, 1 L, 2 L, etc.

soft conversion – the translation of customary unit measurements to their equivalent values in metric units.

SI – abbreviation for the modern metric system, the International System of Units (from the French, Systeme International d'Unites). It evolved from the original French metric system, and is currently being used by most nations of the world.

AMERICAN NATIONAL METRIC COUNCIL
CONSUMER LIASON COMMITTEE

The Consumer Liaison Committee of the American National Metric Council was formed to study ways in which the views of the consumer could be represented in the Council and to provide a means for consumer participation in metrication.

Esther Peterson, *Chairman*
Vice President, Consumer Affairs, Giant Food, Inc.

Barbara Beizer
Associate Director, National Consumers Congress

Charles Cavagnaro
Director of International and Field Operations, Office of Consumer Affairs/HEW

Jane Keely
Director, Appliance and Home Care Department, Good Housekeeping Magazine

John Motley
National Federation of Independent Business, Inc.

Jeffrey Odom
Office of Weights and Measures, National Bureau of Standards

George Papritz
Senior Engineer, Standards, Consumers Union

Lee Richardson
President, Consumer Federation of America

Satenig St. Marie
Division Vice-President, Director of Consumer Affairs, J. C. Penney Company, Inc.

Jean Way Schoonover
President, Dudley-Anderson-Yutzy

Katherine Smith
Vice President Consumer Affairs, Great Atlantic and Pacific Tea Company

David Swankin
Counsel, National Consumers League

Richard Wright
National Retail Hardware Association

SOURCES

Sources for Consumer Metric Information and Assistance

1. American National Metric Council, 1625 Massachusetts Avenue, N.W. Washington, D.C. 20036; 202-232-4545 – Newsletter ($35/year), publications, speakers, Consumer Liaison Committee. (Contact ANMC to be put on mailing list).
2. National Bureau of Standards, Metric Information Program, Washington, D.C. 20234; 301-921-2658 – free printed material, speakers bureau.
3. National Council of Teachers of Mathematics, 1906 Association Drive, Reston, Virginia 22091; 701-620-9840 – 12-page bibliography of metric materials (free).
4. The American Association of School Librarians, 1201 16th Street, N.W. Washington, D.C. 20036; 202-833-4120 – Folder: bibliography of metric materials and metric overview (60 cents ea., 4/$2.00).

Additional copies are available at the following rates:

2–49 copies	40¢ each
50–99 copies	35¢ each
100–499 copies	30¢ each
500 or more copies	25¢ each

Orders under $10 must be accompanied by payment.

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THIRD CLASS MAIL